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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,740	02/17/2006	Vincenc Nemanic	21282-00046-US1	8867
30678 7590 03/17/2008 CONNOLLY BOVE LODGE & HUTZ LLP 1875 EYE STREET, N.W. SUITE 1100 WASHINGTON, DC 20036				
EXAMINER				
PATEL, ASHOK				
ART UNIT		PAPER NUMBER		
2889				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/522,740

## Applicant(s)

NEMANIC ET AL.

## Examiner

Ashok Patel

## Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 2 pages.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

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1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

2. Claims 1-3 and 7 provides for the use of materials, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is

intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

3. Claims 1-3 and 7 are is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

4. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 4: in absence of defining the terms x, y and z as to what they are, claims 1 and 4 are rendered vague and/or indefinite.

Claims 2, 3, 5-7 are necessarily rejected since they depend upon claims 1 and 4.

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5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 4 is rejected under 35 U.S.C. 102(a or b) as being anticipated by Nemanic et al, submitted by applicant.

Nemanic et al disclose electron emitters (nanotube) made of materials based on quasi-one-dimensional transition metal ternary compounds  $M_xH_yHa_z$  (where M is a transition metal Mo; H is sulfur (S); Ha is iodine (I)).

7. Claim 4 is rejected under 35 U.S.C. 102(a or b) as being anticipated by Remskar et al, submitted by applicant.

Remsker et al discloses electron emitters (nanotube) made of materials based on quasi-one-dimensional transition metal ternary compounds  $M_xH_yHa_z$  (where M is a transition metal Mo; H is sulfur (S); Ha is iodine (I)).

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 5, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nemanic et al, as applied to claim 4.

As to claim 5, Nemanic et al do not disclose the percentage range of the material (of claim 4) from 0.01 to 0.99% and the rest being additives, as claimed by applicant.

However, it has been held that where general conditions of the claim are discovered in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

Furthermore, applicant's claimed range of the material would have been obvious to one of ordinary skill in the art since it is

very broad which covers almost nothing to almost all of it.

As to claims 6 and 8, Nemanic et al do not disclose the pressure below 1 mbar, as claimed by applicant.

However, it has been held that where general conditions of the claim are discovered in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

10. Claims 5, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Remsker et al, as applied to claim 4.

As to claim 5, Remsker et al do not disclose the percentage range of the material (of claim 4) from 0.01 to 0.99% and the rest being additives, as claimed by applicant.

However, it has been held that where general conditions of the claim are discovered in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

Furthermore, applicant's claimed range of the material would have been obvious to one of ordinary skill in the art since it is very broad which covers almost nothing to almost all of it.

As to claims 6 and 8, Remsker et al do not disclose the pressure below 1 mbar, as claimed by applicant.

However, it has been held that where general conditions of the

claim are discovered in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

11. Claims 4-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gressier et al (submitted by applicant).

As to claim 4, Gressier et al disclose materials based on quasi-one-dimensional transition metal ternary compounds  $M_xH_yHa_z$  (where M is a transition metal Nb, Mo; H is sulfur (S), selenium (Se); Ha is iodine (I)).

Although Gressier et al do not appear to disclose the  $M_xH_yHa_z$  material for use in electron emitters, the use of the  $M_xH_yHa_z$  material is known in the art for emitting electrons.

In light of this, it would have been obvious to one of ordinary skill in the art of electron emitters to use Gressier et al's  $M_xH_yHa_z$  material for emitting electrons.

As to claim 5, Gressier et al do not disclose the percentage range of the material (of claim 4) from 0.01 to 0.99% and the rest being additives, as claimed by applicant.

However, it has been held that where general conditions of the claim are discovered in the prior art, discovering the optimum or



workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

Furthermore, applicant's claimed range of the material would have been obvious to one of ordinary skill in the art since it is very broad which covers almost nothing to almost all of it.

As to claims 6 and 8, Gressier et al do not disclose the pressure below 1 mbar, as claimed by applicant.

However, it has been held that where general conditions of the claim are discovered in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

12. Claims 4-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt et al (submitted by applicant).

As to claim 4, Schmidt et al disclose materials based on quasi-one-dimensional transition metal ternary compounds  $M_xH_yHa_z$  (where M is a transition metal Nb; H is selenium (Se); Ha is iodine (I)).

Although Schmidt et al do not appear to disclose the  $M_xH_yHa_z$  material for use in electron emitters, the use of the  $M_xH_yHa_z$  material is known in the art for emitting electrons.

In light of this, it would have been obvious to one of ordinary skill in the art of electron emitters to use Schmidt al's  $M_xH_yHa_z$  material for emitting electrons.

As to claim 5, Schmidt et al do not disclose the percentage range of the material (of claim 4) from 0.01 to 0.99% and the rest being additives, as claimed by applicant.

However, it has been held that where general conditions of the claim are discovered in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

Furthermore, applicant's claimed range of the material would have been obvious to one of ordinary skill in the art since it is very broad which covers almost nothing to almost all of it.

As to claims 6 and 8, Schmidt et al do not disclose the pressure below 1 mbar, as claimed by applicant.

However, it has been held that where general conditions of the claim are discovered in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

13. Claims 4-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deng et al (submitted by applicant).

As to claim 4, Deng et al disclose materials based on quasi-one-dimensional transition metal ternary compounds  $M_xH_yHa_z$  (where M is a transition metal Nb; H is Tellurium (Te); Ha is iodine (I)).

Although Deng et al do not appear to disclose the  $M_xH_yHa_z$  material for use in electron emitters, the use of the  $M_xH_yHa_z$  material is known in the art for emitting electrons.

In light of this, it would have been obvious to one of ordinary skill in the art of electron emitters to use Deng et al's  $M_xH_yHa_z$  material for emitting electrons.

As to claim 5, Deng et al do not disclose the percentage range of the material (of claim 4) from 0.01 to 0.99% and the rest being additives, as claimed by applicant.

However, it has been held that where general conditions of the claim are discovered in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

Furthermore, applicant's claimed range of the material would have been obvious to one of ordinary skill in the art since it is very broad which covers almost nothing to almost all of it.

As to claims 6 and 8, Deng et al do not disclose the pressure

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below 1 mbar, as claimed by applicant.

However, it has been held that where general conditions of the claim are discovered in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok Patel whose telephone number is 571-272-2456. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minh-Toan Ton can be reached on 571-272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ashok Patel/  
**Ashok Patel**  
**Primary Examiner**  
**Art Unit 2879**

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